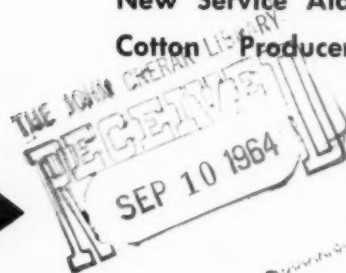


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U. S. DEPARTMENT OF AGRICULTURE • AGRICULTURAL MARKETING SERVICE

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### Cover page

While one employee at the Lubbock, Texas, Cotton Classing Office carefully weighs out a sample of cotton, another one inserts a sample into an airflow instrument for determination of the cotton fiber fineness—a quality factor that is important in the spinning process. This new Micronaire reading service is now available throughout the Cotton Belt to give producers an added measurement of the value of their cotton. The service is furnished by Agricultural Marketing Service's Cotton Division.

*Editor,* MILTON HOFFMAN

*Assistant editor,* JAMES A. HORTON

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# Using Phosphine To Protect Stored Grain From Insects

By Robert R. Cogburn & Elvin W. Tilton

FARMERS and others in the grain industry have a wide choice of fumigants for the protection of their stored grain. One of the newer—and most convenient—fumigants available is phosphine, which found popularity in Europe before it became very well known in the United States.

Marketing researchers in the USDA's Agricultural Marketing Service found phosphine to be one of the most effective methods of controlling even the hard-to-kill immature rice weevil, according to tests made with stored rice. The AMS tests also show that the fumigant gives effective control over the adult stages of the rice weevil and confused flour beetle. And earlier tests by Belgian scientists show that phosphine gives good protection against at least seven kinds of insects and mites that attack grain.

Phosphine is one of the few fumigants that comes in tablet form, which makes it easy to use almost any place where grain is stored in sacks. The tablets are simply spaced among the sacks under gas-proof tarpaulins, which are weighted down at the edges. And the tablets cost only a few pennies each.

The phosphine tablets are about the size of a penny, only thicker. The tablets release phosphine gas upon contact with moist air; the fumes kill over 90 percent of the insects within as little as three days, according to the AMS tests. Complete mortality of insects results within seven days.

The AMS tests show that phosphine

gives equally good protection to rough rice to be used as seed and to milled rice for consumption. The gas has no adverse effect on germination of rough rice, although heavier concentrations are required in the rough than in the milled rice to gain complete control of insects. Concentrations of the gas in rough rice decline sharply after five days and disappear completely after 14 days. All traces of the fumigant disappear by the time the milled rice reaches consumers. However, lethal amounts can be maintained in milled rice to give protection against insects for as long as 28 days by keeping the sacks covered with tarpaulins.

*Hydrogen phosphide, like other fumigants, is extremely toxic to warm-blooded animals. Directions for its use, as set forth on the container label, should be followed Carefully.*

In the AMS tests, there was a good possibility that the insects would not be killed because the sacks of rough rice were tightly stacked.

In addition, some of the phosphine fumes were taken up by the hulls and sacks, but enough of a lethal dosage penetrated to kill insects placed by the marketing researchers in even the deepest areas of the stacks. And all the other insects placed elsewhere in the stacks were killed within seven days. These good results were obtained despite unfavorably low temperatures of 52° to



*Colorless phosphine fumes are given off by penny-size tablets after removal from tightly covered tube. Fumes are released slowly to allow safe distribution of tablets in the grain. Rubber gloves prevent reaction of tablets with moisture on palm of hand.*

58° F. At such temperatures the tablets release gas more slowly than under warmer conditions, and do not give their best performance. The same is true for other fumigants.

Researchers obtained best results by using 121 tablets per 1,000 cubic feet of space under fumigation, in the case of the rough rice. Equally good results were obtained in the AMS tests with fewer tablets when fumigating the milled rice. Only 50 tablets were needed to fumigate the same amount of milled rice, partly because the tests were run at a higher temperature (80° to 90° F.).

As a built-in safety factor, no fumes are released by the tablets until they have been exposed in the air for a certain period, giving adequate time to distribute the tablets in metal pans around the area to be fumigated. The colorless fumes have a distinctive odor which warns of any leakage.

The phosphine fumes caused corrosion when they reacted with the copper in test cages containing insects used in the tests. However, under commercial conditions, there is little chance that fumes would come into contact with any copper material.

Earlier tests have shown that phosphine has been successfully used in fumigation of wheat and corn, in addition to the rice used in more recent tests

*The authors are members of the Market Quality Research Division, stationed at the Houston, Texas, AMS Stored-Products Insect Laboratory.*

# Wheat Sedimentation Test

## *Study by USDA's Agricultural Marketing Service Gives New Evidence of Its Reliability*

THE sedimentation test provides a simple and useful means of estimating the quality of wheat for making bread.

New evidence of the usefulness of the test came out of a broad study, recently completed, of the measurement of wheat quality.

The study was made on the 1962 hard wheat crop by a midwestern commercial cereal laboratory in cooperation with Great Plains Wheat, Inc., and the U. S. Department of Agriculture. Results showed the superiority of the sedimentation test over the protein content test, and any of the "farinogram" characteristics commonly used as measures of wheat quality.

The sedimentation test was developed and gradually improved by USDA's Agricultural Marketing Service. It estimates "strength" in wheat, which depends mainly on the quantity and the quality of the gluten protein present. Flour millers look for wheat of different strengths and other characteristics, depending on whether they are producing bread, cake, cookie, or pastry flour.

The test is helping buyers in this country—and, to an increasing extent, in foreign countries—to get wheat of the kind of baking qualities they want.

The test is quick to conduct and does not require costly equipment or a great amount of technical skill.

Briefly, this is how it is made.

A sample of wheat is run through

corrugated steel rolls and sifted through a 100-mesh sieve. A portion of the resulting flour is mixed with water, lactic acid, and isopropyl alcohol in a cylinder and allowed to settle. The volume of sediment in cubic centimeters after settling for 5 minutes, is the sedimentation value.

In conducting its 1962 wheat quality survey, the midwestern cereal laboratory collected about 3600 samples of wheat from 31 areas of production in the 10 principal States producing hard red wheat.

For quality measurements the laboratory subjected each of the wheat samples to chemical and physical tests, including protein, milling, baking, farinograph, and sedimentation tests.

The wheat samples were taken right after harvest, mostly from trucks of wheat being delivered from farms to country elevators. They were sent in to the laboratory from the important wheat-producing areas in Texas, Oklahoma, Kansas, Colorado, Nebraska, Wyoming, North Dakota, South Dakota, Montana, and Minnesota.

At the end of the harvest season, USDA experts analyzed data from samples selected at random. They made certain that at least one sample from each production area was included, and that the samples represented the entire range of quality.

When the data had been statistically analyzed by the USDA's Statistical Re-

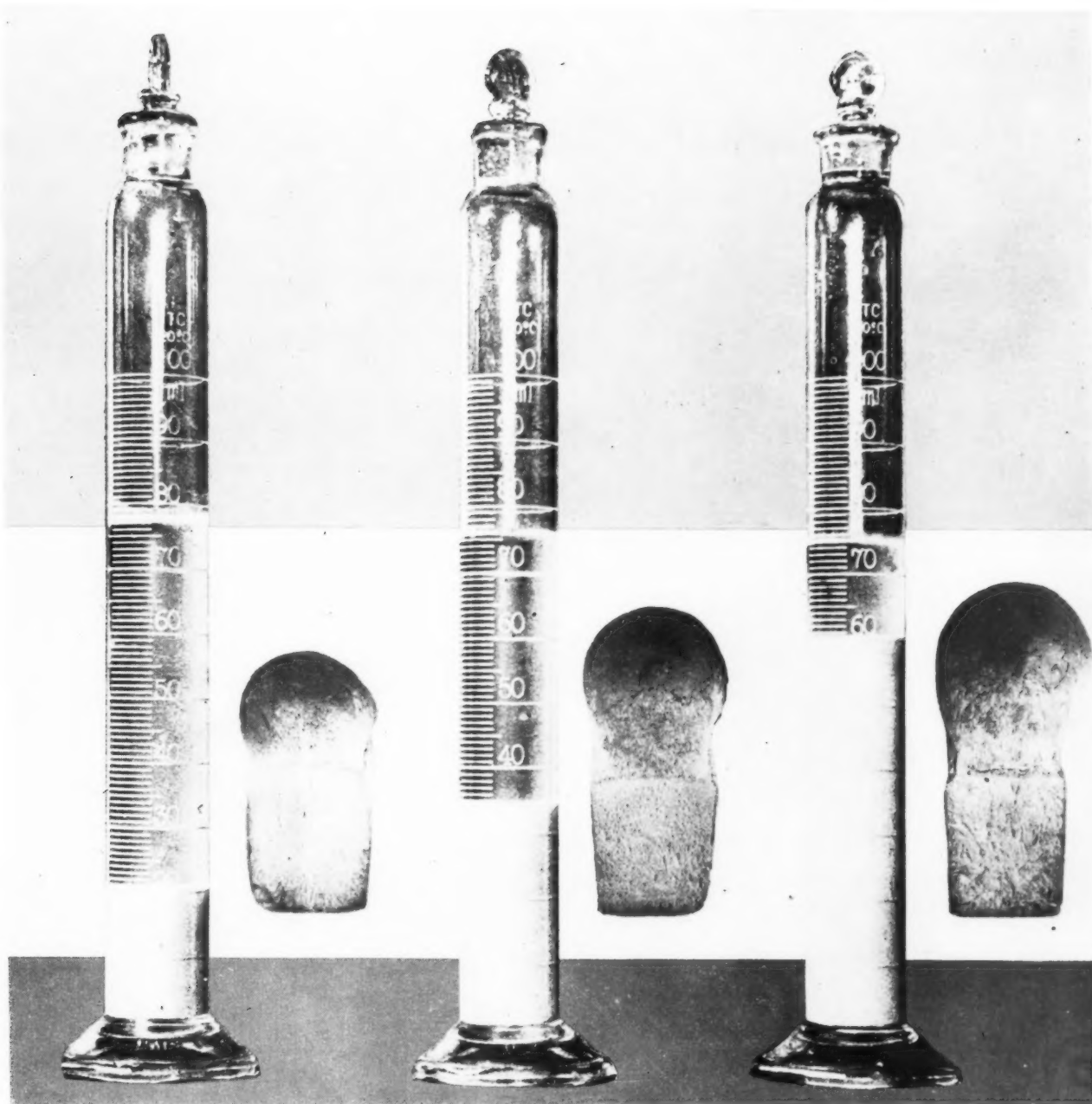
porting Service, it was found that in 18 of the 21 areas producing hard red winter wheat, and in *all* of the 10 areas producing hard red spring wheat, sedimentation was a better measure of bread-baking quality than was protein content. The sedimentation test was *substantially superior* in most of the areas to the protein test as a measure of cereal-baking quality—particularly so in the case of hard red spring wheat.

Sedimentation was also a better indicator of baking strength than any of the farinogram characteristics commonly used as measures of wheat quality. In most instances, this superiority was quite marked.

Dr. Lawrence Zeleny, of the Grain Division, Agricultural Marketing Service—who originated the wheat sedimentation test—sums up the value of the recent laboratory study and accompanying statistical analysis this way:

"This is the most comprehensive survey ever made of the quality of one year's wheat crop, in which the sedimentation test was used as one of the measures of quality. It is particularly gratifying to find that the test has performed so well."

A more detailed report of the findings described in this article is available from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C. It is "Sedimentation as a Measure of Wheat Quality—1962 Crop," Marketing Research Report No. 587.



*The sedimentation test is simple and quick to conduct. These three cylinders show how closely the amount of sedimentation reflects the bread-baking qualities of the flour samples. The higher the sediment in the cylinder, which holds a mixture of carefully measured water, lactic acid, isopropyl alcohol, and wheat flour, the higher the loaf of bread.*



# Handling Apples In Pallet Boxes

*Empty pallet boxes loaded onto a highway truck for movement to the orchard.*



**T**HE extensive shift from standard apple boxes to large pallet boxes for storing fresh apples is continuing to revolutionize handling and storing practices in the apple industry.

Researchers in the Agricultural Marketing Service of the U. S. Department of Agriculture find that reasons for this trend are as many as the numerous advantages that pallet boxes, with a capacity of about 25 bushels, have over other smaller containers.

One of the significant advantages, they have found, is the highly efficient use of storage space. Twenty percent more apples can be stored in the same space in a storage room when pallet boxes are used in place of palletized standard boxes.

An additional 15 percent of the storage space can be saved if the fruit is sorted and sized and put back into pallet boxes before storage. This practice eliminates storing culls and other off-grade apples and leaves only the marketable fruit to occupy storage space.

The automatic pallet box filler provides a practical means of filling pallet boxes with the fruit as it comes from the sorting and sizing line.

Since the apples are sized and sorted before being stored, orders can be filled promptly. The pallet boxes containing the size and quality of fruit requested on the order are moved out of storage and the fruit is packed into shipping containers. When storage operators handle apples this way, they have an inventory of their apple stocks and can plan their marketing program accordingly.

The new automatic filler, designed under contract for the Agricultural Marketing Service, can bring large savings in time and labor. Only one worker is needed—and then only part-time—to attend the filler. Actually, just 14 sec-

onds of productive labor are required to move the filled box out from under the filler and push an empty box in place.

The mechanical filler can fill one pallet box every 5 minutes, or about 7 standard apple box equivalents per minute. With an adequate number of box fillers (and allowing some time lag for the worker), one worker could handle 1,500 standard box equivalents per hour.

Extensive tests at various stages of its development show that the automatic filler causes no significant bruising to the fruit. In no instance was bruising serious enough to lower the grade of the apples.

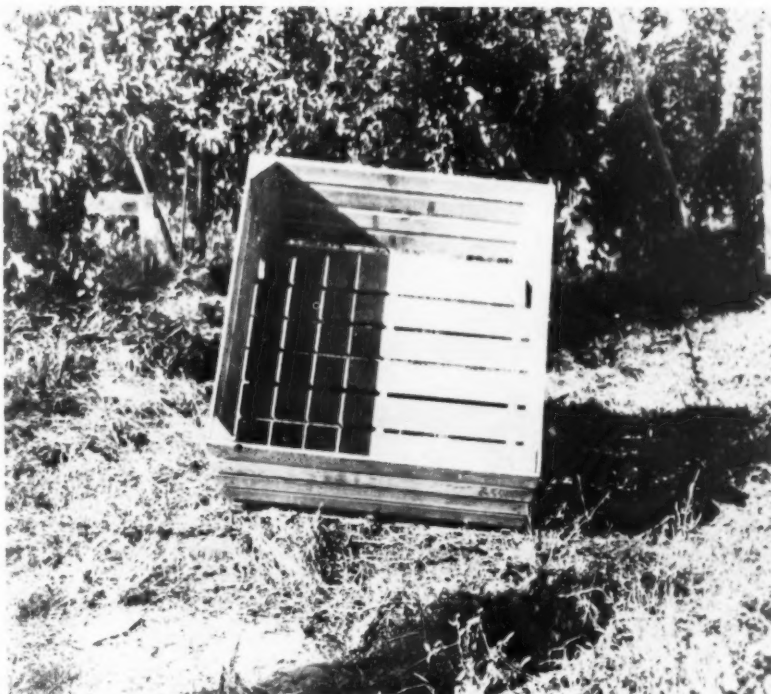
Another advantage that pallet boxes have over standard containers is that more apples can be carried at a time on a forklift truck. This results in a great saving of labor in moving apples within the packinghouse.

A final advantage of pallet boxes is in cooling performance. Cooling tests indicate that apples stored in pallet boxes with an 8- to 11-percent ventilation area in the sides or bottom cool better and faster than apples stored in standard containers on pallets.

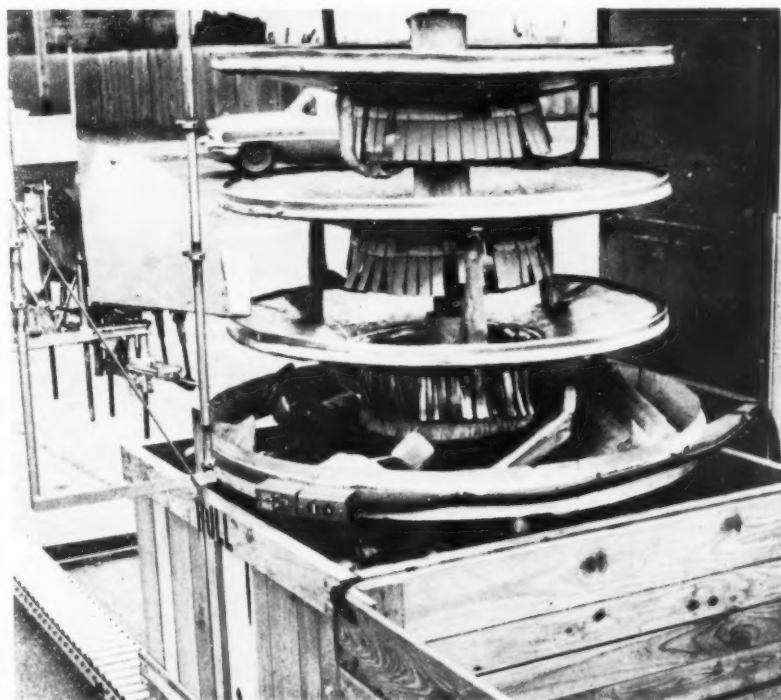
The keeping quality of apples depends, to a large extent, on the temperature at which they are stored, and on how quickly they are cooled to storage temperature after harvesting. AMS researchers learned that because apples stored in properly designed pallet boxes get better ventilation, they cool faster. Thus, they are kept in better condition during storage.

The increased capacity and speed of handling with pallet boxes increased the load on the refrigeration system. Storage operators should keep this in mind when changing from standard containers to pallet boxes. If refrigeration capacity is inadequate, operators may not be able to maintain the desired storage temperature. Operators should review their refrigeration capacity, gear their receiving of fruit to it, and avoid overloading the refrigeration equipment.

Further information on handling and storing apples in pallet boxes is in MRR-532, "Cooling Apples in Pallet Boxes," and AMS-236, "Handling and Storage of Apples in Pallet Boxes." Single copies of MRR-532 can be obtained by writing to the Office of Information, USDA, Washington 25, D.C.; for copies of AMS-236, write to Agricultural Marketing Service, USDA, Washington 25, D.C. A forthcoming report by marketing researchers will describe the operation and advantages of the automatic pallet box filler for apples.



*Above, an inside view of maximum-cooling pallet box, showing free airspace in deck and side panels. Below, a pallet-box filler, with baffles that permit the apples to drop only a small step at a time, and with disks to help distribute the apples around the entire pallet box and spread the fruit to minimize collision. Ring at bottom prevents fruit from rolling off filler at last filling stage.*



# The Food Stamp Program Today

**M**ORE Americans are enjoying better diets from increased food purchasing power made available through the U.S. Department of Agriculture's Food Stamp Program. By the end of March most of the program expansion under the pilot or test phase will be accomplished. When the 1963 scheduled expansion is completed later this spring, there will be food stamp programs in 44 counties and 3 major cities in 23 States.

USDA's Agricultural Marketing Service notes that the presently designated areas provide an excellent opportunity to test and observe the program under a variety of operating conditions, to supplement and complement preliminary findings in the original eight pilot areas. The original areas will complete two full years of operation this summer.

In Fayette County, Pennsylvania, and McDowell County, West Virginia, two of the eight original areas, studies conducted by USDA's Economic Research Service showed that the dollar volume of sales in sample retail food stores averaged seven percent higher after the Food Stamp Program had been operating approximately a year. The study encompassed a four-week period of April-May 1962 compared with the same period of 1961 just before the program was inaugurated. The higher percentage sales gains were for produce, followed by meats and grocery items.

These findings confirm the positive favorable effect the Food Stamp Program had on retail food sales reported in a preliminary six-months' study completed in the fall of 1961, the researchers noted.

The earlier studies also revealed that participating families substantially up-graded their diets with the Federal assistance, and it was largely this gain in food consumption that led to the USDA decision to expand the scope of the pilot program in 1962-63. The greater part of the increased food value was in the farm products that make maximum use of agricultural productive resources—such items as fresh fruits and vegetables, meat, poultry, milk and eggs.

Under the food stamp method, eligible families pay an amount for food coupons that they would normally be expected to spend for foods included in the program. In return, they receive coupons of greater value. This enables them to buy additional foods.

Coupons are used to purchase any food—except a few imported items—at authorized retail outlets. Coupons cannot be used to buy nonfood items, alcoholic beverages or tobacco. Retailers redeem the coupons at face value in banks, or through participating wholesalers.







# Official FOOD LIST

## FOOD STAMP PROGRAM

All items on this list are eligible for purchase with food stamps.

Alcohol

Beef, Pork, Lamb, Chicken, Turkey, Fish, Shellfish, Eggs, Butter, Milk, Cream, Ice Cream, Soft Drinks, Cakes, Pastries, Breads, and other food items.

The food and drug laws are enforced by the Federal Food, Drug, and Cosmetic Administration.

The Department of Agriculture is responsible for the administration of the Food Stamp Program.

For more information, contact your local Food Stamp Office.

U.S. DEPARTMENT OF AGRICULTURE

WASHINGTON, D.C.

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# Salvaging Seed Potatoes

## Exposed to Low Temperatures

**S**HOULD a potato farmer, shipper, or other handler discard his entire supply of seed potatoes if he finds signs of freezing injuries among them? Some, guided by early research, would reject the entire lot—both the visibly injured potatoes and those showing no symptoms—for use as seed.

More recent tests show such a drastic decision is unnecessary and wasteful. These tests show that even though signs of freezing injury such as sunken surface areas and dark spots in the interior of cut pieces of seed are found among some of the potatoes, those without visible symptoms are perfectly good for use as seed. And, contrary to opinions based on research conducted in the 1930's, growth and yield of plants



*Above, a recording thermometer is removed from a test shipment of pre-cut seed potato pieces. The potato in the right photo was held all day to a temperature of 25° F. and then jarred, causing freezing injuries. The potato on page 11 was also held all day at 25° F.; but it was then warmed to 50° F. and handled gently. No freezing symptoms were found.*



were not reduced in the tests with the use of symptom-free seed after exposure to freezing temperatures.

The tests were conducted by marketing and production research personnel in USDA's Agricultural Marketing Service and Agricultural Research Service, Cornell University, and the University of Delaware.

The researchers recommend that every effort be made to protect seed potatoes from low temperatures during handling, transportation, and storage. But if freezing occurs despite all precautions, there's a good chance that a worthwhile portion of the seed potatoes can still be used, if the injured ones are culled.

The tests were made with four popular varieties of potatoes: Irish Cobblers, Katahdin, Pungo, and Red Pontiac. A wide geographical area was represented in selecting and testing the potatoes. Seed came from Maine, Minnesota, and North Dakota. Tests using the seed were conducted in Delaware, Maryland, and New York. About four tons of seed, consisting of nearly 16,000 seed pieces, were used in the tests.

Standard commercial and farm practices were used or simulated in storing, transporting, and planting the seed potatoes. Some of them were exposed to temperatures below the recommended 40° F. in tests made under conditions simulating shipment by rail, truck, or boat. A high relative humidity—85 to 95 percent—was maintained.

One lot of potatoes did not freeze even when exposed all day to a temperature of 25° F. Another lot was held under the same conditions except that it was repeatedly jarred. This induced freezing injuries. Such jarring might normally be expected for potatoes under some shipping conditions, as when moving bags in or out of trucks or railcars. If these potatoes had been rewarmed before they were moved or jarred, freezing injuries might have been avoided.

Despite the numbing cold and the surrounding injured potatoes, those free of freezing symptoms produced healthy plants in a normal time after planting. Over 98 percent of the salvaged seed produced plants with normal growth and yields. Sprouting and yields were only slightly lower than average in the seed that had been jarred—where actual freezing had begun. The salvaged seed was rewarmed before planting, to induce better sprouting.

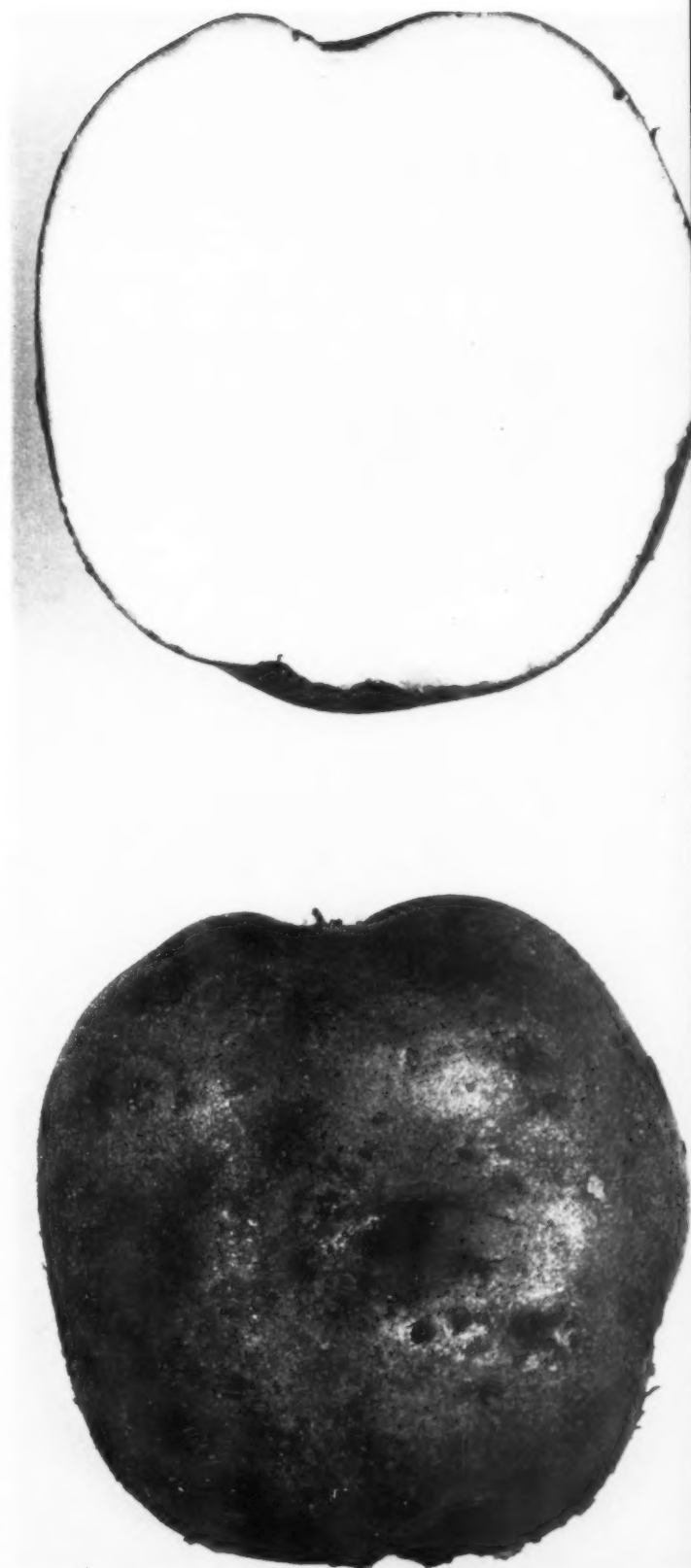
All four varieties of potatoes performed well in the tests. Results were virtually parallel in each of the regions where planting tests were made with the salvaged seed. Both whole and cut seed pieces reacted nearly alike in the tests.

In summary, the tests demonstrate—on a large scale and in different geographical areas—three points valuable to growers, shippers, and dealers:

- That uninjured seed potatoes exposed to freezing temperatures can still be marketed and planted with good results;
- That it's worthwhile to warm seed to start sprouting before planting. (Poor results in past tests may have resulted because cold, dormant seed was used and not because of exposure to freezing temperatures);
- That it's worthwhile to warm carlots, trucklots, or storage lots of seed potatoes before moving them if they've been exposed to freezing temperatures, to prevent possible freezing induced by jarring the seed.

Complete details may be obtained by sending for Marketing Research Report No. 507, "Seed Potato Productivity After Cooling, Supercooling, or Freezing." Single free copies are available from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

(This article is based on research conducted by Howard W. Hruschka, AMS; Robert V. Akeley, ARS; Edward H. Ralph, University of Delaware; Richard L. Sawyer, Cornell University; and Allen E. Schark, ARS.)





*In top photo classing employees work busily over the Christmas holidays to make micronaire readings of cotton samples for producers. Above, results of cotton classing are sorted for return to the cotton producer. Below, a cotton "colorimeter" is used to measure cotton brightness and color in border-line cases.*



## New Service A

**M**ANY cotton producers in West Texas utilized a new service of the AMS Cotton Division of the U.S. Department of Agriculture this past season and had micronaire readings made on cotton samples from more than a million bales.

This new service, a measurement of cotton fiber fineness through use of special airflow instruments, was made available to producers for the first time last year through eight Texas and Oklahoma Cotton Classing Offices.

The service was so popular that it is now being offered for the next season to the entire Cotton Belt.

Micronaire readings are available for producers' cotton samples which are submitted for classing under the Smith-Doxey Act. The micronaire service is performed on a fee basis and is authorized under the Cotton Testing Service Act.

The micronaire reading service determines the fineness of cotton fibers through use of airflow instruments.

When a cotton producer submits a cotton sample for classing and also for making a micronaire reading, the sample goes first to the "MIKE" lines at the





*The left photo shows a line for making micronaire readings. The line involves two stations, each consisting of a scale and an airflow instrument. Each station takes a reading on the same sample of cotton, one from each side of the bale. In the right photo bags of cotton samples are received at the classing office for classing under the Smith-Doxey Act.*

## e Aids Cotton Producers

Cotton Classing Offices. A sample of cotton consists of two small portions from each side of one bale of cotton.

On the line, the sample is divided into its two portions (one from each side of the bale) and, generally, a separate machine makes a micronaire reading on each side.

The cotton is weighed first on a highly sensitive scale or balance to exactly 50 grains and then placed inside a one-inch-diameter cylinder on an airflow instrument.

A mechanical plunger compresses the cotton and air is forced through the fibers. The amount of airflow is measured on a micronaire scale on the machine and this reading furnishes the micronaire reading for the sample of cotton.

How does it work? If cotton fibers are coarse, they will offer less resistance and air will flow through freely. Fine fibers, however, will fit more closely together and airflow will be cut down.

From the micronaire reading lines, the cotton continues on to the classing room for classing under the Smith-Doxey Act.

Although the micronaire reading serv-

ice is not in itself a cotton classing service, it serves much the same purpose as the traditional cotton classing—both services help the producer to sell his cotton.

When the producer has this information about the quality—grade, staple and fiber fineness of his cotton—he is in a much better position to obtain the best possible market for the cotton.

In a recent announcement, the AMS Cotton Division said that the micronaire reading service would be available for any cotton submitted for classification under the Smith-Doxey Program during the next season.

Two dates should be kept in mind:

May 1—The fee for the coming season will be announced around this date. Last season's fee was eight cents per sample.

July 1—Applications for this service must be submitted at least by this date in order to give classing offices sufficient time to install equipment and train personnel. Classing offices may not be able to provide testing service to gins submitting applications after July 1 due to a lack of equipment and trained personnel.

Not only was the Lubbock Cotton Classing Office one of the sites where the micronaire reading service was first offered by USDA, it was also the scene this winter of unusual devotion to duty, as more than 400 employees spent their Christmas and New Year's holidays classing cotton during an unusually late season.

During the summer, unfortunate weather delayed the development of the West Texas cotton crop. This, coupled with late fall frosts on the upper Texas plains, pushed the cotton harvesting season into December, instead of the November normal.

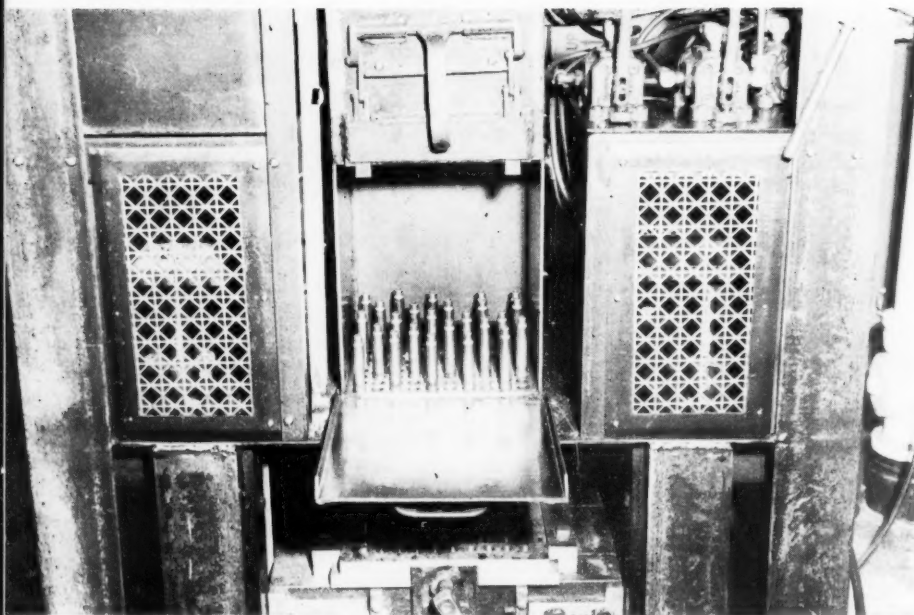
Cotton producers in this area desperately needed the results of their cotton classing and of the micronaire reading service—so they could decide whether to market the cotton during the 1962 or the 1963 tax year.

In order to give these farmers the best possible service, the more than 400 employees at the Lubbock office worked in two steady shifts over the holidays, as did many employees in seven other cotton classing offices in Oklahoma and West Texas. Joining in also were many classers representing most of the cotton-producing States over the Nation.

As a result of this loyalty to service, most of the heavy December ginnings were classed and reported to farmers before the end of the year.



# USDA Proposes Modernization Of Wool Grade Standards



*The hydraulic subsampling machine above can be used to obtain wool fiber samples for measurement under USDA's proposed micron specifications for grades of wool. The wool is packed in the machine, the door closed, and the tubes forced up through the sample. The sharp edges of the tubes cut out a random fiber sample. The fibers are then measured under a microscope to determine their average diameter. Below, a grader checks fiber characteristics.*



**T**HE grading of wool—heretofore more an art than a science—may soon be catching up to some of the space-age technology which is becoming so commonplace in the agricultural industry.

The Livestock Division of USDA's Agricultural Marketing Service recently proposed a revision of the official grade standards for wool—a revision which would represent a more objective approach to grade determination. The proposal would make available—for the first time—standards based on principles of scientific measurement rather than the present standards which consist only of visually classified physical samples.

Current standards provide for 12 numerical grades of wool, ranging from 80's (finest grade) to 36's (coarsest grade). These grade numbers, traditional in the wool industry, date back to a time when quality evaluation was based on the length of yarn which could be spun from a given volume or weight of wool top. The finer the fiber, the more yardage per pound—thus the finer the wool, the higher the grade number.

The proposed standards specify average fiber diameter measurements, expressed in microns (approximately 1/25,000 of an inch), for 14 grades of wool—80's, 70's, 64's, 62's, 60's, 58's, 56's, 54's, 50's, 48's, 46's, 44's, 40's, and 36's. Two new grades—62's and 54's—would bring these grades for grease wool (obtained from the living sheep) into close conformity with those for wool top, (wool which has been scoured, carded and combed).

In addition, the proposal calls for two additional classifications: "finer than grade 80's" and "coarser than grade 36's," the names of which are self-explanatory.

Years of study, demonstration, discussion, and field testing by the Denver Wool Laboratory—a part of the Livestock Division—went into the preparation of the new standards. More than a thousand individual lots of wool were

measured for fiber fineness to provide the basis for the average fiber diameter specifications.

Accompanying the proposed revision of the wool grade standards is a proposed revision of "Methods of Test for the Determination of the Grades of Wool," which prescribes two methods for grading—an "inspection method" and a "measurement method."

Under the inspection method, a sample of the wool to be graded is visually compared with official samples representative of the various grades. As the name implies, the measurement method calls for actual measurement of sample fibers from a particular lot.

Normally, the visual inspection method would be used to determine grade. The measurement method would prove too time-consuming for everyday use in most commercial wool buying operations, but the measurement procedure could provide an unbiased check on the grade assigned any lot of wool.

Under the provisions of the proposal, USDA would make available actual physical samples of wool depicting the various grades. If the proposal is adopted, USDA will offer samples for both wool and wool top for sale.

Along with the more objective approach to grade determination, the Livestock Division is proposing a series of uniformity guides to express variations in fiber diameter. Use of these guides, in conjunction with the grade designation, would permit a more accurate and precise description of wool quality. Two samples of wool, for example, might each have an average fiber diameter of 21 microns and, therefore, be graded as 64's. However, the two samples might differ widely in uniformity of fiber diameter—which would result in a substantial difference in their respective values. The uniformity guides would provide a means for reflecting such variations.

Copies of the proposed revision—which was published in the Federal Register for Jan. 25, 1963—may be obtained from the Livestock Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington 25, D. C. Interested persons are invited to submit their written comments on the proposal prior to May 25, 1963. Comments should be addressed to the Director, Livestock Division.

The U. S. is the world's largest exporter of farm products. Our 1961-1962 exports were enough to fill over one million freight cars, or 4,500 cargo ships.

## A New Report On Wheat Exports

**A**N executive in a large grain company reaches for his intercom. He rings his secretary . . .

"Mary, please get the March 15 issue of *Grain Market News* out of the files—see how much hard red winter wheat was exported to Japan during February under "commercial sales."

In their urgent efforts to assist United States wheat in "holding its own" in competitive world markets, such members of our Nation's wheat community as this grain company executive must keep properly informed.

To keep informed, they need a variety of facts and figures.

Throughout the country, grain companies, exporters and merchandisers, transportation companies, port officials, and wheat growers are looking to a recently-refined report issued by USDA's Agricultural Marketing Service to help guide them in making these sales decisions.

The report, appearing once a month in the weekly *Grain Market News*, issued from Washington, D.C., includes data on inspections of wheat for export. Wheat shipped to our international markets is inspected under provisions of the U. S. Grain Standards Act.

Exporters furnish data for the report

to AMS grain inspection supervisors at the time and point where the inspection is made.

Newest information in the report, making it even more valuable, shows the type of sale under which wheat is exported for "dollars" and how much is exported under various special programs.

Seven designations appear in the report:

*Commercial sales*, which are commonly referred to as "dollar sales;"

*Title I, Public Law 480*, under which sales are made for foreign currency;

*Donations*, under P.L. 480;

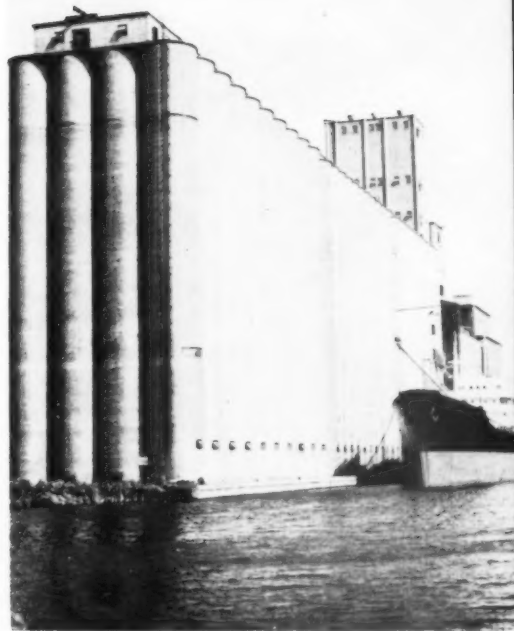
*Barter*, under Title III, P. L. 480;

*Title IV, P.L. 480, Long-term credit*;

*CCC, Short-term credit*; and

*A. I. D.*, for economic development and technical assistance programs conducted by the State Department's Agency for International Development.

Dependent upon an export market which last year commanded about three-fifths of U. S. wheat production, growers and members of the wheat trade—now faced with a more competitive world market—are finding that the reliable information in this new wheat export market report is helping to satisfy their "need to know."



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## New Export Technique For Citrus

**T**HE recent successful arrival in Basel, Switzerland, from Lakeland, Fla., of an experimental shipment of grapefruit can contribute to a significant improvement in exports of U.S. citrus fruit and other products because of lower handling costs and reduced quality losses, the U.S. Department of Agriculture said recently.

The Department was reporting on preliminary findings by transportation and market quality research personnel of its Agricultural Marketing Service who accompanied the shipment from point of origin to destination.

The 36,000-pound shipment of grapefruit in cartons was loaded at Lakeland into a prototype model 35-foot new type highway semitrailer equipped with a 7½-ton diesel-powered refrigeration-heating unit and 3 inches of polyurethane foamed in-place insulation.

The evaporators (cooling-heating coils) and air distribution system were a new design and both front and rear evaporators utilized two fans each for air circulation under and upward through the load, the researchers said.

On a through-bill-of-lading, the shipment traveled by highway to Auburn-dale, Fla., where it was placed on a railroad flat car and moved "piggyback" to Norfolk, Va. There the trailer was lifted by crane from the rail car to the deck of a freighter where it was shored and tied down for the Atlantic crossing. The trailer was offloaded by crane at La Pallice, France, 10 days later, coupled to a highway tractor and driven over the highway to Basel, Switzerland.

Marketing researchers reported that the citrus shipment reached the wholesale terminal in Basel in excellent condition, with no pitting and less than 1 percent decay. They said that after the initial cool-down period, fruit temperatures varied only 3 degrees throughout the load during the 19-day trip of almost 4,000 miles.

Among advantages of "containerized" shipment indicated by their study of this experiment, marketing researchers said, were:

- Less handling. Individual boxes were handled once at the packinghouse at loading time, once at the final destination. This compares with eight to ten handlings under the conventional system, and results in less physical damage to commodity and container.

- Fiberboard containers protected the fruit well in the containerized shipment.

- Individual temperature control for each unit can be provided according to cargo requirements. Degreening for citrus could be done naturally during the transit period with proper temperature control to provide the untreated fruit that is highly desired in Europe.

- Refrigerated containers on deck make every ship a refrigerated ship. Shipment could be scheduled for departure from many South Atlantic ports whenever fruit was available. It would

no longer be necessary to save special sizes of fruit at the packinghouse, awaiting the arrival of a refrigerated ship.

Florida citrus suppliers have already received from buyers in Zurich, Hamburg, Paris, and London requests for additional shipments, although buyers and suppliers recognize that some problems still must be solved before this method of shipment can be established as a regular practice.

Cooperating in this preliminary research were the Florida Citrus Commission, Florida Citrus Exchange, Florida Fresh Citrus Shippers Association, Florida Citrus Mutual, University of Florida Citrus Experiment Station, Lakeland Packing Company, United States Lines, Container Transport International, Inc., Corrugated Container Institute, Seaboard Air Line Railroad, North American Car Corporation, Groupement Technique des Transporteurs Mixtes Route-Rail (French piggyback organization), and Rath Unitized Navigation, Inc.

## March is Egg Month

**T**HE egg, that longtime aristocrat of the breakfast table, will again stand center stage as March ushers in springtime and the 10th National Egg Month. The U.S. Department of Agriculture's Agricultural Marketing Service is co-operating with the poultry industry in urging increased consumption of this ever-popular and nutritious food.

As spring approaches, the poultry industry hits its peak productivity period, and redoubled efforts are made to merchandise eggs.

Secretary of Agriculture Orville L.

Freeman requested that the educational, informational, and promotional resources of the Department of Agriculture be directed toward energetic merchandising of eggs.

For some years now, the average per capita consumption of eggs has been on the decline. Last year, per person egg consumption was 324, compared with the 10-year average of 354.5 eggs.

Poultrymen and others engaged in the industry are urged to promote National Egg Month, when there will be an abundance of this fine food.

